IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

3G LICENSING, S.A., KONINKLIJKE KPN N.V., and ORANGE S.A., Plaintiffs, v. BLACKBERRY LIMITED and BLACKBERRY CORPORATION, Defendants.	)	C.A. No. 17-82-LPS-CJB **JURY TRIAL DEMANDED**
3G LICENSING, S.A., KONINKLIJKE KPN N.V., and ORANGE S.A., Plaintiffs, v. LENOVO GROUP LTD., LENOVO HOLDING CO., INC., LENOVO (UNITED STATES) INC. and MOTOROLA MOBILITY LLC, Defendants.	)	C.A. No. 17-84-LPS-CJB **JURY TRIAL DEMANDED**
3G LICENSING, S.A., KONINKLIJKE KPN N.V., and ORANGE S.A., Plaintiffs, v. LG ELECTRONICS INC., LG ELECTRONICS, U.S.A., INC. and LG ELECTRONICS MOBILECOMM U.S.A., INC., Defendants.	)	C.A. No. 17-85-LPS-CJB **JURY TRIAL DEMANDED**

KONINKLIJKE KPN N.V., Plaintiff, v. GEMALTO IOT LLC, GEMALTO M2M GMBH, and GEMALTO INC., Defendants.	C.A. No. 17-86-LPS-CJB **JURY TRIAL DEMANDED**
KONINKLIJKE KPN N.V., Plaintiff, v. KYOCERA CORPORATION and KYOCERA INTERNATIONAL, INC., Defendants.	C.A. No. 17-87-LPS-CJB **JURY TRIAL DEMANDED**
KONINKLIJKE KPN N.V., Plaintiff, v. NEC CORPORATION and NEC CORPORATION OF AMERICA, Defendants.	C.A. No. 17-88-LPS-CJB **JURY TRIAL DEMANDED**
KONINKLIJKE KPN N.V., Plaintiff, v. SIERRA WIRELESS, INC. and SIERRA WIRELESS AMERICA, INC., Defendants.	C.A. No. 17-90-LPS-CJB **JURY TRIAL DEMANDED**

KONINKLIJKE KPN N.V., Plaintiff, v. TCL COMMUNICATION, INC., TCL COMMUNICATION TECHNOLOGY HOLDING LIMITED, TCT MOBILE, INC., TCT MOBILE (US) INC., and TCT MOBILE (US) HOLDINGS, INC., Defendants.	)	C.A. No. 17-91-LPS-CJB **JURY TRIAL DEMANDED**
KONINKLIJKE KPN N.V., Plaintiff, v. TELIT WIRELESS SOLUTIONS, INC., Defendant.	)	C.A. No. 17-92-LPS-CJB **JURY TRIAL DEMANDED**

DEFENDANTS' OPENING BRIEF IN SUPPORT OF THEIR MOTION FOR JUDGMENT ON THE PLEADINGS THAT U.S. PATENT NO. 6,212,662 IS INVALID UNDER 35 U.S.C. § 101

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Plaintiff Koninklijke KPN N.V. ("KPN") asserts U.S. Patent No. 6,212,662 ("the '662 Patent") (Ex. A) in eleven cases. In seven of the cases,[1] the '662 Patent is the only asserted patent. In the remaining four cases, the '662 Patent is one of five asserted patents.[2] The above-captioned Defendants move under Fed. R. Civ. P. 12(c) for judgment on the pleadings that the claims of the '662 Patent are invalid under Section 101 as patent-ineligible.

The claims of the '662 Patent—which issued more than a decade before the Supreme Court's landmark decision in *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347 (2014)—are directed to the abstract idea of reordering data and generating additional data. They say nothing about how to reorder the data, how to use the reordered data, how to generate the additional data, or how to use the additional data. Instead, they claim the abstract idea in a purely functional manner, devoid of any specifics of particular machines used to accomplish the claimed idea. The claims purport to cover ***all ways*** of achieving the claimed idea, and thereby preempt every way of implementing it. The claims therefore fail the two-part test established by the *Alice* decision, which prohibits functional, abstract claiming like that found in the '662 Patent.

Defendants bring this motion early to resolve all proceedings related to the '662 Patent as quickly and efficiently as possible. As discussed during the case management conference, Defendants respectfully request that the Court hear this motion early in the case because of the large number of defendants against whom the '662 Patent is the only asserted patent, and in view of the fact that KPN settled its previous litigation on the eve of trial and just before another court would have resolved a similar motion under Section 101.

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[1] The '662 Patent is the only patent in the cases against Gemalto (Case No. 17-cv-86-LPS-CJB), Kyocera (C.A. No. 17-87-LPS-CJB), NEC (C.A. No. 17-88-LPS-CJB), Sierra (C.A. No. 17-90-LPS-CJB), TCL (C.A. No. 17-91-LPS-CJB), Telit (C.A. No. 17-92-LPS-CJB), and OnePlus (C.A. No. 17-89-LPS-CJB).

[2] Five patents, including the '662 Patent, are asserted against Blackberry, HTC, Lenovo, and LG.

I. NATURE AND STAGE OF THE PROCEEDINGS

KPN filed its original Complaint against each Defendant on January 30, 2017, and amended its Complaint against each Defendant at least once (amending in some cases three times). With the exception of OnePlus, who has not yet been served, each Defendant has answered or otherwise responded to the Complaint as of July 21, 2017. The initial case management conference took place on August 14, 2017.

II. SUMMARY OF ARGUMENT

The four claims of the '662 Patent are quintessentially abstract. The single independent claim recites an unspecified "device" that does two things. First, it reorders data. Second, it generates additional data. There is nothing more. The claims do not specify how the data are reordered, how the reordered data are used or how the additional data are generated. Also, the patent's stated purpose is error checking, but the claims do not recite how the additional data are used for such error checking. No claim bridges this gap. The dependent claims merely recite that the way the reordering occurs may vary in time, may be based on the original data, or may be stored in a table, all in unspecified ways. Claims directed to such abstract ideas, without concrete requirements for how to accomplish them, have consistently been held invalid under Section 101.

Another indication that the claims are abstract is that they can be performed by a human using pen and paper, or even one's own mind. A person could easily perform the basic character of the claims: rearrange data into a different order, and then generate some additional data. Unlike cases in which courts have found claims sufficiently concrete, the claimed subject matter does not seek to improve the functionality of a computer itself but instead relates only to the manipulation of data. Thus, the claims fail the first part of the two-part *Alice* test.

The claims also fail the second step of *Alice*. The claims are devoid of any concrete, specific means of performing the claimed abstract idea. That the additional data be used in

checking for errors, in an unspecified way, is merely a statement of intended environment, which courts have repeatedly held is not sufficient to save a claim from invalidity under Section 101. Similarly, the preamble's requirement that the data are organized in blocks of bits adds nothing inventive: that is the conventional way in which data are organized in computers, and the patent does not contend otherwise. The dependent claims likewise add nothing to the abstract idea. In short, KPN's patent seeks to preempt the use of any device that reorders data and then generates additional data, regardless of how that is done.

Because KPN's claims fail both parts of the Supreme Court's test for eligibility, Defendants' motion for judgment on the pleadings should be granted.

III. STATEMENT OF FACTS

A. The '662 Patent Specification

The '662 Patent describes checking for errors in transmitted data. *See, e.g.*, Ex. A ('662 Patent) at 1:10-11. It seeks to improve known methods by providing "a method which allows data to be checked for errors in a better way." *Id.* at 2:18-21. It discloses a "method for the transmission of data between a transmitting end and a receiving end of a transmission channel, involving the generation of supplementary data at the transmitting and the receiving end by a first and a second function respectively, and the comparison of the supplementary data generated by said functions in order to detect transmission errors." *Id.* at 1:12-19.

The '662 Patent acknowledges that the generation of supplementary data for checking for errors in a transmitted data stream was known before its priority date. The patent discusses "[p]rior art methods [that] provide for the checking of transmitted (user) data by the addition of supplementary data . . . ." *Id.* at 1:34-37; *see also id.* at 1:20-21.

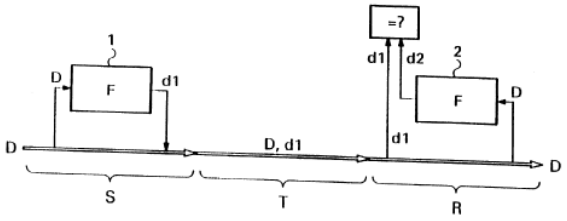


FIG. 1
PRIOR ART

As shown above in the prior art Figure 1, a first function 1 generates "supplementary or check data d1" for use in error checking. *Id.* at 3:32-34. The original data D and the check data d1 are then transmitted over a transmission path T to a receiving end R. *Id.* at 3:34-36. At the receiving end R, a second function 2 generates "supplementary or check data d2" which is compared to the transmitted check data d1. *Id.* at 3:37-40. If check data d1 matches check data d2, "the transmission has apparently taken place without errors." *Id.* at 3:41-43.

The '662 Patent's alleged improvement over the system shown in Figure 1 involves ***permutating*** (*i.e.*, reordering) the data in the first function prior to ***generating*** the supplementary data (called "check data" in the claims). *See, e.g.*, *id.* at 5:58-60. This is shown in Figure 3:[3]

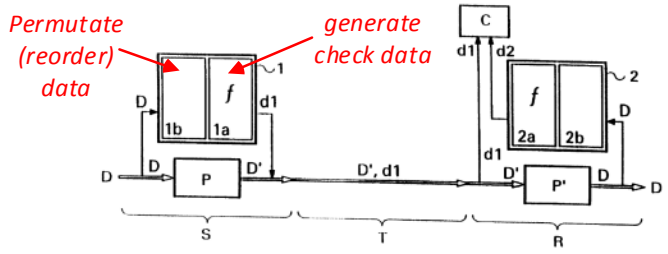


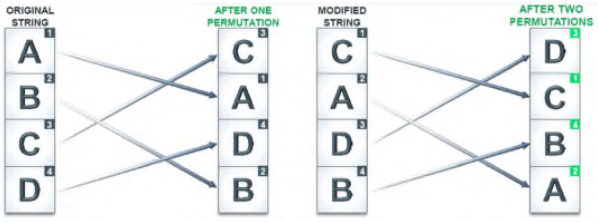
FIG. 3

As shown, the first function 1 includes a "fixed part 1a" and a "variable part 1b." *Id.* at 5:55-57. "[T]he variable part 1b, which brings about a variation in the data, comprises a permutation of the data D." *Id.* at 5:58-60. During prosecution, KPN explained "that the meaning of the term

[3] During prosecution of the '662 Patent, KPN stated that the alleged invention was "particularly concerned with the Figure 3 embodiment. . . ." Ex. B at 3; Ex. C at 2.

'permutation' is the usual mathematical one involving a reordering of members of a given set." Ex. B (6/7/2000 Amendment) at 2. After the data is permutated, the fixed part 1a processes the data by performing some undisclosed function "f" on the data to generate the "supplementary or check data" d1 for transmission. *See id.* at 5:57-58 and 4:24-45. The process is repeated on the receiving end to generate supplementary data d2, which can be compared with the received supplementary data d1 to determine whether any transmission errors occurred. *See id.* at 4:7-11 (referring to Fig. 2).

The specification provides a single example of a permutation that can be performed on the original data in block 1b. Specifically, the bit positions of a data block having bits ABCD can be "interchanged . . . as follows: bit 1 to position 2, bit 2 to position 4, bit 3 to position 1 and bit 4 to position 3." *Id.* at 5:59-63; *see also id.* at 5:63-65 ("A bit string represented ABCD thus has the sequence CADB after one permutation, the sequence DCBA after two permutations, and so on."). This is illustrated as follows below (figure not from the patent):



No other example is described, and there is no further suggestion of other types of permutations that can be performed. The patent also suggests that different permutations might be used at different times, and might be stored in a table. *See id.* at 5:65-6:2.

The patent does not describe how additional data are generated using the function "f." In fact, the only substantive things the patent says about the function "f" are that: (1) it "generates supplementary data d1," (2) it "is fixed but may also be variably implemented," and (3) it can be implemented in software or hardware. *Id.* at 3:60-61, 4:3-4, 6:16-22.

B. The Claims of the '662 Patent

While the specification itself provides little specificity, the claims provide none. The '662 Patent has only four claims, one of which is independent. All of the claims relate to the functionality depicted on a single side of Figure 3 (*i.e.*, transmitter side or receiver side). Independent claim 1 is below:

> **1**. A device for producing error checking based on original data provided in blocks with each block having plural bits in a particular ordered sequence, comprising:
>
> a generating device configured to generate check data; and
>
> a varying device configured to vary original data prior to supplying said original data to the generating device as varied data;
>
> wherein said varying device includes a permutating device configured to perform a permutation of bit position relative to said particular ordered sequence for at least some of the bits in each of said blocks making up said original data without reordering any blocks of original data.

In particular, the claim recites a device "for producing error checking" that includes two generic elements. ***First***, it requires a "varying device" which includes a "permutating device." The function of the "varying device" and "permutating device" is to perform a permutation of the bits of data in a block without reordering the blocks themselves. ***Second***, the claim requires a "generating device" that generates "check data" in an unspecified manner. Nothing else is recited in the claim. The claim does not specify how the data is reordered. Nor does the claim specify how the reordered data is used once it is sent to the generating device. Nor does the claim specify how the check data is generated. The claim also says nothing about what happens to the check data once it is generated, or how it is used to check for errors.

The three dependent claims correspond to the specification's suggestion to use different permutations over time. *See id.* at 5:65-6:2. Claim 2 states that the varying device can "modify

the permutations in time," in an unspecified way; claim 3 adds that the varying device can "modify the permutation based on the original data," again in an unspecified way; and claim 4 says the "permutating device includes a table in which the subsequent permutations are stored."

C. The *Samsung* Litigation Involving the '662 Patent

KPN previously asserted the '662 Patent against Samsung Electronics Co., Ltd. in a case filed December 30, 2014, in the Eastern District of Texas (case No. 2-14-cv-01165-JRG) ("the *Samsung* litigation"). The case was litigated for nearly two years before settling in September 2016, just prior to a trial scheduled to begin that same month.

The court in the *Samsung* litigation issued a *Markman* Opinion and Order (Ex. D) that construed the following claim terms from the '662 Patent:

Claim Term	Construction
preamble of claim 1	"limiting only as to 'original data provided in blocks with each block having plural bits in a particular ordered sequence'" (*see* Ex. D at 30)
"producing error checking" (claim 1 preamble)	"not a limitation" of the claim (*see* Ex. D at 30)
"permutation" (claims 1-4)	"reordering of members of a given set" (*see* Ex. D at 32)
"modify the permutation in time" (claim 2)	"change the permutation from time to time" (*see* Ex. D at 35)
"generating device configured to generate check data" (claim 1)	"device which generates supplementary data for use in checking for errors" (*see* Ex. D at 36)

Shortly after claim construction, Samsung filed its Rule 12(c) motion based on Section 101. In its motion, Samsung argued that the claims of the '662 Patent recite the abstract idea of "using a mathematical algorithm to generate data for use in checking for errors."[4] The motion

[4] Defendants here argue that the claims recite a different, but very similar, abstract idea. Defendants articulate the abstract idea they believe most closely represents the character as a whole of the claims. Regardless, the present motion presents the same essential argument as Samsung: the claims recite an abstract idea and are not limited by an inventive concept.

was fully briefed (*see* Exs. E-G) and argued. However, KPN settled the case before the court ruled on the Rule 12(c) motion. Shortly after the settlement, KPN filed the present cases.

It is appropriate to assess patent eligibility under Rule 12(c) using the constructions most favorable to the patent owner. *See Content Extraction & Transmission LLC v. Wells Fargo Bank, NA*, 776 F.3d 1343, 1349 (Fed. Cir. 2014). Here, KPN told Defendants during the Rule 26(f) conferences that the Court need not construe the claims because they have already been construed by the Eastern District of Texas. Moreover, in the *Samsung* case, KPN proposed or agreed to each of the above constructions except for "permutation," which KPN argued required no construction. Thus, for purposes of this motion, Defendants will apply the Eastern District of Texas constructions, but do not agree that any construction is needed to assess the eligibility of the claims under Section 101 or that those constructions are binding in any way on this Court.[5]

IV. LEGAL STANDARDS

A. Judgment on the Pleadings

"After the pleadings are closed—but early enough not to delay trial—a party may move for judgment on the pleadings." Fed. R. Civ. P. 12(c). When evaluating a motion for judgment on the pleadings, the Court must accept all factual allegations in a complaint as true and view them in the light most favorable to the non-moving party. *See Rosenau v. Unifund Corp.*, 539 F.3d 218, 221 (3d Cir. 2008). In considering a Rule 12(c) motion, "[t]he Court may also take judicial notice of the factual record of a prior proceeding." *Data Engine Techs., LLC v. Google Inc.*, 211 F. Supp. 3d 669, 674 (D. Del. 2016) (citing *Oneida Motor Freight, Inc. v. United Jersey Bank*, 848 F.2d 414, 416 n.3 (3d Cir. 1988)).

[5] Should this case proceed to claim construction, Defendants reserve the right to propose different claim constructions than those adopted by the Eastern District of Texas, and also reserve the right to argue the claims are invalid under other sections of Title 35.

Validity under 35 U.S.C. § 101 is a question of law. *In re Bilski*, 545 F.3d 943, 951 (Fed. Cir. 2008), *aff'd Bilski v. Kappos*, 561 U.S. 593 (2010). Where, as here, the patent's claims are directed to non-patentable subject matter, that question is properly addressed through a motion for judgment on the pleadings under Rule 12(c). *See, e.g.*, *buySAFE v. Google Inc.*, 765 F.3d 1350 (Fed. Cir. 2014) (affirming this Court's dismissal of patent claims based on 12(c) motion on Section 101 grounds); *see also Intellectual Ventures I LLC v. AT&T Mobility LLC*, C.A. No. 12-193-LPS *et al.*, 2016 WL 7491806, at *2 (D. Del. 2016) (citing *In re Bilski*, 545 F.3d 943, 951 (Fed. Cir. 2008)); *OIP Techs., Inc. v. Amazon, Inc.*, 788 F.3d 1359, 1360 (Fed. Cir. 2015).

B. 35 U.S.C. § 101

Section 101 of the Patent Act requires that a patent disclose a "new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof." 35 U.S.C. § 101. The Supreme Court has carved out three areas that are ineligible for patent protection: "laws of nature, physical phenomena, and abstract ideas." *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980). These basic tools of scientific and technological work are "free to all men and reserved exclusively to none." *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 130 (1948). This rule of law reflects the basic concern that allowing a patentee to preempt use of these basic tools would "tend to impede innovation more than it would tend to promote it." *Mayo Collab. Servs. v. Prometheus Labs.*, 566 U.S. 66, 71 (2012).

In *Alice*, the Supreme Court set forth a two-part test to determine the validity of a claim under Section 101. The first step is to "determine whether the claims at issue are directed to one of those patent-ineligible concepts," namely, laws of nature, natural phenomena, and abstract ideas. 134 S. Ct. at 2354-55. If so, then the second step is to examine whether the claims are limited by an "inventive concept" such that "the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself." *Id.* at 2355. "Simply appending conventional

steps, specified at a high level of generality," implementing an idea on a "general-purpose digital computer" or "limiting the use of an abstract idea 'to a particular technological environment'" is not enough. *Id.* at 2357-58 (quoting *Bilski v. Kappos*, 561 U.S. 593, 610-11 (2010)).

In assessing whether a claimed invention is abstract, "the claims are considered in their entirety to ascertain whether their character as a whole is directed to excluded subject matter." *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015). Thus, for example, claims that recite the ideas of "taking existing information . . . and organizing this information into a new form" or "manipulation or reorganization of data" do not pass muster. *See Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344, 1351 (Fed. Cir. 2014); *Cybersource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1375 (Fed. Cir. 2011); *RecogniCorp, LLC v. Nintendo Co., Ltd.*, 855 F.3d 1322, 1326-1327 (Fed. Cir. 2017). In addition, whether the claims are functional in nature, or instead directed to a concrete, specific way of implementing the abstract idea, is important to the analysis. *See Clarilogic v. FormFree Holdings Corp.*, 681 Fed. Appx. 950, 954 (Fed. Cir. 2017).

V. THE CLAIMS OF THE '662 PATENT ARE UNPATENTABLE

The claims of the '662 Patent recite the unpatentable abstract idea of reordering data and generating additional data. They also do not contain a concrete, inventive concept sufficient to transform the claimed abstract idea into a patent-eligible invention. That the abstract idea is implemented by generic "devices" or is intended to be somehow used in checking for errors is insufficient to save the claims. Under a straightforward application of the Supreme Court's *Alice* framework, the claims are ineligible for patent protection. *Alice*, 134 S. Ct. at 2355.

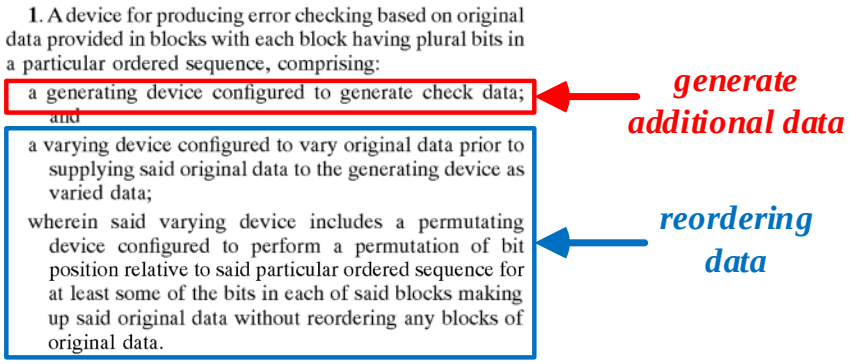
A. The Claims of the '662 Patent Recite an Abstract Idea

1. The Claims Recite Merely Reordering Data and Generating Additional Data

Under any plausible reading, the claims as a whole are directed to simply reordering data

and generating additional data, which is exactly the sort of abstract idea the Supreme Court declared ineligible under Section 101. *See Alice*, 134 S. Ct. at 2358. This articulation of the abstract idea embodies the "character as a whole" of the claims—there are no further substantive limitations. *Internet Patents*, 790 F.3d at 1346 ("the claims are considered in their entirety to ascertain whether their character as a whole is directed to excluded subject matter").

As discussed above, claim 1 recites only generic "device" elements, each of which is expressed solely by its function. The function of the "varying device" is to "vary the original data" and the function of the "permutating device" is to perform a permutation (*i.e.*, reordering) of bits in each block of the original data. The "varied data" is then supplied to the "generating device," which is configured to "generate check data" (*i.e.*, additional data). As illustrated in the annotated version of the claim below, that is the sum total of the substantive claim limitations—even under the Texas court's claim constructions KPN advocates should apply in this case, nothing requires any particular method for reordering, any particular processing of the reordered data to generate the additional "check data," any particular method of generating the additional data, or any particular machine or technology for accomplishing these functions:



Indeed, the claim does not even recite how the "check data" is used to check for errors. *See Intellectual Ventures I LLC v. Symantec Corp.*, C.A. No. 13-440-LPS, 2017 WL 639638, at *4 (D. Del. Feb. 13, 2017) (finding unpatentable claims that "do not provide any concrete details

that limit the claimed invention to a specific solution" and that "simply rely on functional language"); *see also Affinity Labs of Texas, LLC v. Amazon.com Inc.*, 838 F.3d 1266 (Fed. Cir. 2016); *In re TLI Comms. LLC Patent Litigation*, 823 F.3d 607, 612-613 (Fed. Cir. 2016).

While the Court may look to the independent claim as the controlling representative claim for purposes of determining patent eligibility, dependent claims 2-4 "are substantially similar and linked to the same abstract idea" as claim 1. *See Content Extraction & Transmission*, 776 F.3d at 1348 (finding that the district court "correctly determined that addressing each claim of the asserted patents was unnecessary"). Nevertheless, as discussed above, claims 2 and 3 simply recite modifying the permutations based on "time" or "the original data," both in some unspecified fashion. Claim 4 states that the permutations can be stored in a table, which is just a "well-understood, routine, conventional activit[y]," and is insufficient to confer patent eligibility. *See OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1363 (Fed. Cir. 2015) (storing test results in a machine-readable medium is insufficient to confer patent eligibility under *Alice*). The dependent claims also recite reordering the data, yet say nothing about how to actually do so. Specifically, they do not say how the permutations should be modified in time or be based on the original data—rather they claim all ways of accomplishing such modifications.

Because the "character as a whole" of all four claims is nothing more than the reordering of data and generation of additional data, and that idea is abstract, step one of *Alice* is satisfied.

2. The Claims Can Be Performed Entirely in the Human Mind

Although not required to establish ineligibility under Section 101, the abstractness of the idea claimed in the '662 Patent is also supported by the fact that it can be "performed entirely in the human mind." *See Data Engine Techs.*, 211 F. Supp. 3d at 679 ("[C]omputation methods which can be performed ***entirely*** in the human mind are the types of methods that embody the 'basic tools of scientific and technological work' that are free to all men and reserved exclusively

to none" (quoting *Cybersource*, 654 F.3d at 1373 (emphasis in original) (internal quotations omitted)); *see also Coffelt v. NVIDIA Corp.*, 680 Fed. Appx. 1010, 1011 (Fed. Cir. Mar. 15, 2017) (claims to deriving a pixel color "mathematically" could be done by a human; "without more" such steps are mental processes within the "abstract-idea category.").

This is demonstrated easily using the single permutation example set forth in the specification, which involves switching the order of the letters ABCD to CADB. Undisputedly, such a process can be performed by a human with no knowledge of signal processing or error correction. It is natural to imagine four Scrabble squares, each with the letters A, B, C and D respectively, and asking someone to reorder the letters as he or she would like.[6]

Moreover, the second claimed step of generating additional data can similarly be done by a human without any machine. For example, under the Texas construction of the claims, the additional "check data" could be a reversal of the reordered letters. In the patent's example, the reordered letters are CADB, so the additional data could be BDAC. A human could certainly perform this step without the use of a machine. That is the point of this motion: the permutation and generation of additional data is so generic, as claimed, that it can be done in one's mind.

That the claimed process can be performed by humans is also demonstrated by how long humans have been doing the types of abstract ideas claimed by the '662 Patent. For example, over 2000 years ago, ancient Spartans permutated messages to protect their content by writing a message across a ribbon wrapped around a stick of a particular diameter, such that the letters were randomly permuted until the ribbon was wrapped around another stick of the correct

[6] To take the example further, a person could repeat this in sequence for another four squares, and another four squares, reordering only the squares within each four-square set, but not reordering the sets (*i.e.*, "blocks") of squares, as recited by the claim.

diameter.[7] Such permutation has been applied in the field of computer data transmission for over seven decades. In 1945, Claude E. Shannon described using permutations for purposes of error correction in data transmission.[8] That people have been using abstract ideas like those found in the claims for over 2000 years, without the aid of computers, also supports the conclusion that they are abstract. *Content Extraction & Transmission*, 776 F.3d at 1347 (holding that the claims were directed at an abstract idea because the claimed idea was "undisputedly well known").

The claims here are completely different from those in cases where the claims are directed to a specific computer feature, which the human mind would have difficulty performing. *See, e.g., Intellectual Ventures I LLC v. Symantec Corp.*, 100 F. Supp. 3d 371, 403-04 (D. Del. 2015) (holding that claim directed to "detecting a computer virus in installed data ... in a telephone network" was not directed to abstract idea because underlying concept did not "make sense outside of a computer context"). Here, claims 1-4 require only reordering data and generating additional data in an unspecified way, and the sole example in the patent makes clear that this can be performed by a human mind.

3. The Federal Circuit and This Court Have Previously Found Similar Claims Invalid Under 35 U.S.C. § 101

The Federal Circuit has consistently rejected claims that recite the abstract ideas of manipulating or reordering data, or generating additional data. For example, in *Digitech Image Techs.*, the Federal Circuit considered a claim that recited the method of: (1) capturing image data, (2) generating first and second data sets from the image data using either "chromatic stimuli" or "spatial stimuli" and "device response characteristic functions," and (3) combining the two sets into a "device profile." 758 F.3d at 1350-51. The court noted that the claim covered the

[7] *See, e.g.*, Ex. H (Djekic, *A Scytale – Cryptography of the Ancient Sparta* (Nov. 25, 2013)).

[8] *See* Ex. I ("A Mathematical Theory of Communication" by C.E. Shannon).

abstract idea of "taking existing information . . . and organizing this information into a new form." *Id.* at 1351. It held that "[w]ithout additional limitations, a process that employs mathematical algorithms to manipulate existing information to generate additional information is not patent eligible." *Id.*; *see also Gottschalk v. Bensen*, 409 U.S. 63, 68 (1972) (holding that a process for converting signals from one form to another was ineligible because it is "so abstract and sweeping as to cover both known and unknown uses" of that conversion technique). As discussed above, this is what is claimed by the '662 Patent: manipulating existing information (*i.e.*, reordering original data) and generating additional information (*i.e.*, "check data").

In *Cybersource*, the Federal Circuit considered a claim to a device "for detecting fraud in a credit card transaction" that involved obtaining information about other transactions, constructing a mapping based on the other transactions, and utilizing the mapping to determine if the transaction is valid. 654 F.3d at 1373-74. The court found that the claim was patent ineligible because it claimed the abstract idea of "manipulat[ing] data to organize it in a logical way such that additional fraud tests may be performed." *Id.* at 1375. The court held that "[t]he mere manipulation or reorganization of data" is insufficient to confer patent eligibility. *Id.* As is also the case here, the Federal Circuit also relied on the fact that the claimed mapping could be performed by a human with a pen and paper. *Id.* at 1372.

This Court has also rejected claims reciting the abstract idea of manipulating or reordering data. For example, in *Personalized Media Communications, LLC v. Amazon.com, Inc.*, the Court considered a claim directed to the abstract idea of decryption, specifically the idea of "receiving an encrypted control signal and encrypted information, decrypting the control signal, using the signal to decrypt the information, and then presenting programming." 161 F. Supp. 3d 325, 332-33 (D. Del. 2015). Citing *Digitech* and the fact that such cryptography techniques have been

known "since ancient Mesopotamia," the Court invalidated the claim, noting that such a process for "'manipulat[ing] existing information to generate additional information is not patent eligible'" *Id.* at 333 (citing *Digitech*, 758 F.3d at 1351); *see also RecogniCorp*, 855 F.3d at 1326-27 (finding a claimed method reflecting standard encoding and decoding to be abstract); *Electric Power Group, LLC v. Alstom S.A.*, 830 F.3d 1350, 1354 (Fed. Cir. 2016) (finding a claim directed to the process of gathering and analyzing information, and "not any particular assertedly inventive technology for performing those functions" to be abstract); *Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1340 (Fed. Cir. 2017) (asserted claims were "at their core, directed to the abstract idea of collecting, displaying, and manipulating data"); *Novo Transforma Techs., LLC v. Sprint Spectrum L.P.*, C.A. 14-612-RGA, 2015 WL 5156526, at *2-3 (D. Del. Sept. 2, 2015) (finding a claim directed at the abstract idea of translating messages from one format to another is ineligible); *SAP Am., Inc. v. Investpic, LLC*, C.A. 3:16-CV-02689-K, 2017 WL 2189433, at *5 (N.D. Tex. May 18, 2017) (finding a claim directed to resampling data "is nothing more than data manipulation to create a new data set from an existing data set").

Because the Federal Circuit and this Court have consistently held claims like those of the '662 Patent abstract, this Court should do so here as well.

4. The Claims Preempt the Use of Any Device That Reorders Data and Generates Additional Data

Although not necessarily required to show ineligibility, if a claim is so broad as to preempt an entire field of the abstract idea, it is clearly ineligible. In *Alice*, the Supreme Court held that if a patent would preempt use of "basic tools of scientific and technological work," it would "impede innovation more than it would tend to promote it, thereby thwarting the primary object of the patent laws." 134 S. Ct. at 2354 (internal cite and quotation marks omitted).

Here, the claims of the '662 Patent preempt the use of any device that reorders data and

then generates additional data. There is nothing in the claims, even as construed by the Texas court, that meaningfully narrows them, for example, to a specific way of reordering data, generating additional data, or using additional data in error correction, or even to a particular type of transmission. In other words, unlike in *McRO, Inc. v. Bandai Namco Games America Inc.*, there are no "specific features" in the claims that "prevent broad preemption." 837 F.3d 1299, 1315-16 (Fed. Cir. 2016). Thus, the claims "disproportionately t[ie] up" the use of the abstract idea. *Alice*, 134 S.Ct. at 2354 (quoting *Mayo*, 132 S. Ct. at 1294).

B. The Claims of the '662 Patent Are Not Limited by an Inventive Concept

In part two of the *Alice* test, the Court must determine whether there is an "inventive concept" by "consider[ing] the elements of each claim both individually and as an ordered combination to determine whether the additional elements transform the nature of the claim into a patent-eligible application." *Alice*, 134 S. Ct. at 2355 (internal quotation marks omitted).

In this case, evaluating the claimed elements either individually or as an ordered combination leads to the conclusion that they cover no more than the routine abstract idea of reordering data and generating additional data. Although the patent purports to have met a need in the art, the claims recite nothing inventive or transformative and indeed stop short of specifying actually using data for error checking. The concept of reordering data and generating additional data somewhere in the middle of an unarticulated process for error checking is not itself an inventive concept, and in any event is not sufficiently concrete to make the abstract idea patentable. Taken individually or in combination, the recited limitations neither improve the functions of a known device, nor provide for specific devices or technologies, tailored processing steps, or any other specific, concrete guidance for how to implement the claimed abstract idea. Accordingly, they do not limit the claims to provide the requisite inventive concept under *Alice*.

The only definitive elements in the claims that KPN could point to are: (1) the claimed

functions are performed by "devices," (2) the device is to be used "in checking for errors," (3) the "original data [is] provided in blocks with each block having plural bits in a particular ordered sequence" and the reordering is only performed on the bits in each block, "without reordering any blocks," and (4) the permutations are modified "in time," modified "based on original data," or stored in a table. As discussed below, none of these make the abstract idea patentable.

1. The "Device" Limitations Do Not Provide an Inventive Concept

The "device" limitations of the claims are insufficient to transform the abstract idea into patentable subject matter. The claimed "devices"—"a generating device," "a varying device," and "a permutating device"—perform only the most elementary functions of age-old generic computers, reordering and generating data. *Alice* expressly rejected the idea that performing an abstract idea using generic devices confers patentability. *Alice*, 134 S. Ct. at 2358 ("[T]he mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention."); *see also Gammino v. Am. Tel. & Tel. Co.*, 127 F. Supp. 3d 264, 273 (D. Del. 2015) (noting that "[t]he Supreme Court and Federal Circuit have held that there is no 'inventive concept' if a claim recites an abstract idea implemented using 'generic' technology").

2. The Intended Use Does Not Provide an Inventive Concept

The fact that the additional data may be used in checking for errors is also insufficient to transform the abstract idea into patentable subject matter.[9] First, as discussed above, such a statement merely restates the express goal of the '662 Patent and is nothing more than a "field of use," which cannot confer patentability. *See Bilski*, 561 U.S. at 612. Second, even if the intended use is considered, the claims still do not recite anything about how the additional data is

[9] While the *Samsung* court held that the preamble's "producing error checking" language does not limit the claim, it construed "generating device configured to generate check data" to mean "device which generates supplementary data for use in checking for errors." Ex. D at 30 and 36.

somehow used for checking errors, let alone some previously unknown way. Notably, "checking for errors" in data transmission, which is what the entirety of the '662 Patent specification discusses, must involve a synchronized transmitter and receiver according to the patent. *See* Ex. A ('662 Patent) at 2:59-63, 3:1-3, and 5:15-30 (emphasizing the importance of synchronization). The claims, however, are directed to only one aspect of the transmission. They do not recite transmission or reception of data or synchronization of a transmitter and receiver. And, as pointed out above, the claimed device does not actually check errors or articulate how to do so. *See id.* at 2:63-3:5. As such, the statement of intended use does not match what is claimed and cannot suffice to provide an inventive concept.

3. The Data Structure Does Not Provide an Inventive Concept

The claims state that "original data [is] provided in blocks with each block having plural bits in a particular ordered sequence" and the permutations are applied such that the bits of each block are reordered "without reordering any blocks of original data." There is nothing inventive about these recitations—it was well known at the time of the patent that data could be provided in blocks made up of individual bits. *See, e.g., Commw. Sci. and Indus. Research Org. v. Buffalo Tech. (USA), Inc.*, 542 F.3d 1363, 1384-85 (Fed. Cir. 2008) (citing a 1993 IBM Dictionary of Computing for its conclusion that "a block of data is most reasonably understood to consist of one or more bits"). Moreover, there is nothing novel or inventive about reordering the bits of individual blocks, while not reordering the order of the blocks themselves, and the '662 Patent does not claim otherwise. *See Recognicorp*, 855 F.3d at 1328 ("[C]laim 1 is directed to the abstract idea of encoding and decoding. The addition of a mathematical equation that simply changes the data into other forms of data cannot save it."). Indeed, although the specification of the '662 Patent discloses reordering the "bit positions within a data block" (*see* Ex. A at 5:60-61), it does not even try to contend that doing so in a manner that does not reorder the blocks of data

is novel. As such, this limitation does not confer patent-eligibility on the claims.

4. The Dependent Claims Do Not Provide an Inventive Concept

Claims 2 and 3 simply recite that the permutation is modified "in time" or "based on the original data." These limitations add nothing material to the abstract idea, as they do not provide any concrete details regarding how the data is reordered. Rather, they simply allow the reordering to be modified in some way. Yet, they say nothing about how the permutations are modified in time or based on the data.

Similarly, claim 4 adds nothing helpful. It states only that the permutations are stored in a table. As discussed above, this is just a "well-understood, routine, conventional activit[y]," and is insufficient to confer patent eligibility. *See OIP Techs., Inc.*, 788 F.3d at 1363.

5. The "Ordered Combination" Does Not Provide an Inventive Concept

Finally, the Court must determine whether viewing the claim as an ordered combination "transform[s] the nature of the claim" into patent-eligible subject matter. *Alice*, 134 S. Ct. at 2355. In *Bascom Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, the Federal Circuit required the district court to consider whether "an inventive concept can be found in the non-conventional and non-generic arrangement of known, conventional pieces." 827 F.3d 1341, 1350 (Fed. Cir. 2016). The claims here do not—they "add nothing… that is not already present when the steps are considered separately." *Alice*, 134 S. Ct. at 2359 (internal quotation omitted). As shown above, each of the individual elements that KPN may purport to rely on is known and conventional, and the ordered combination does nothing more than implement the abstract idea of reordering data and generating additional data in a known and conventional manner.

VI. CONCLUSION

For the foregoing reasons, the claims of the '662 Patent fail the Supreme Court's two-part *Alice* test, and thus the Court should find them invalid under 35 U.S.C. § 101.

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